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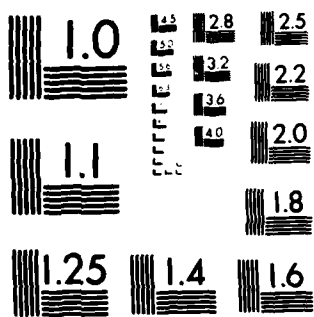
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Archaeological Survey and Testing for the Upstream
Work. Big Stone Lake-Whetstone River Project Area.

Elden Johnson
Professor of Anthropology
University of Minnesota
September 1975

Contract Number: DACW37-75-C-0198

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Abstract

A literature search, field survey, and test excavations in the area of the upstream work, Big Stone Lake-Whetstone River project area produced no historic or prehistoric sites within the geographic limits of the planned construction.

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A. Introduction

The archaeological survey conducted under this contract took place in the extreme upper Minnesota River and the terminal Whetstone River valleys of Minnesota and South Dakota. The area in question is small, intruded upon by both Ortonville, Minnesota, and Big Stone City, South Dakota, and lies immediately below Big Stone Lake which forms the South Dakota-Minnesota border. The area is outlined on the Ortonville quadrangle map in the end pocket of this report, and a detailed enlargement of the project area and localities surveyed appears on the internal map. It should be noted that the project is an extension of the larger Big Stone National Wildlife Refuge project lying immediately downstream and surveyed by the University of Minnesota earlier (see Caine, 1974).

The upper Minnesota River valley between Ortonville and Big Stone City is the beginning point of Glacial River Warren which drained both Lake Agassiz I and Lake Agassiz II in the terminal and early post-glacial Pleistocene. The valley is very wide and deep for its entire length, reflecting the huge outpouring of glacial melt water. Big Stone Lake forms the headwaters source of the Minnesota River and is really, together with Lake Traverse to the north, a very small remnant of Glacial Lake Agassiz. Big Stone Lake has very little discharge and the upper Minnesota River is a small stream meandering over a wide flood plain.

The Whetstone River is the first tributary of the Minnesota River and enters the valley at the west edge of Big Stone City, South Dakota. The Whetstone formerly moved southeast to a juncture

with the Minnesota below Ortonville, but its normal channel was eliminated many years ago and the Whetstone flow directed northeast to join the Minnesota immediately below Big Stone Lake and immediately north of a control structure on the Minnesota River.

1. Scope of Work

The scope of work called for in this project asked for "survey and testing of: bank stabilization area on the Whetstone River SW of Big Stone City; Whetstone River diversion channel east of Big Stone City; disposal areas along the Whetstone River; channel improvement of the Minnesota River from Big Stone Lake to the new channel; and the new channel from the Minnesota River cutoff to the reservoir." That last point is at the refuge boundary and the Lac Qui Parle County line and is the upstream end of the refuge area surveyed earlier (Caine, 1974).

2. Literature Search

Although Big Stone and Traverse Lakes have an extremely high concentration of sites on both the Minnesota and South Dakota sides, no sites on the National Register of Historic Places for South Dakota or Minnesota lie in the project area nor are there recorded any other prehistoric or historic sites listed in official state files. Local collectors contacted have no materials from the project area.

3. Research Plan and Personnel

This project called for intensive survey which means test excavations as well as surface examination, contacts with local collectors, and a literature search. Test excavations were conducted

in all of the localities within the project except the Whetstone River bank stabilization location at the west edge of Big Stone City. There, as can be seen in the photographs (Figs. 1 and 2), the banks are covered with debris and the surface areas are parts of an active cattle feeding operation, making test excavations impossible.

Test excavations were minimally 1x1m (1.3 ft.) squares taken down to the upper portion of the C soil horizon. Where possible, the soils removed were screened, but the fine wet clay/silt soils usually meant that the excavations units were taken down with trowels below the plow zone. Strata cuts were also made wherever possible along both Whetstone and Minnesota River banks at points where erosion had left a vertical bank without vegetation cover.

The personnel included Elden Johnson, Professor of Anthropology, University of Minnesota, as project director and field director. He was assisted by his son, Bruce Johnson, undergraduate student, University of Wisconsin-Madison.

B. Survey Areas

1. Whetstone Bank Stabilization Locality

This is the point immediately below the zone where the Whetstone River enters the Minnesota River valley from the west. The Whetstone turns abruptly south, moving along the edge of the Minnesota River flood plain. The bank stabilization area is at the point of the curve where the river turns south. The east bank of the Whetstone here is cutting into a Minnesota River terrace

while the west bank is 2m (6.6ft) lower. The east bank is owned by a Mr. Cody of Big Stone City who operates a cattle feed lot. The bank erosion is cutting into his feed lot and is approaching structures and he has, for several years, dumped some 70 junked cars along the bank to prevent the cutting. Below the Highway 12 bridge, he has added huge slabs of concrete this past summer. All of these attempts at preservation can be seen in the photos, Figs. 1 and 2. The banks are sterile of cultural materials--other than junked cars--and Mr. Cody would not permit test excavations on his property.

2. Spoilage Areas--South Dakota and Minnesota

Area #1: This area lies on the flood plain and is owned by Mr. and Mrs. Nelson of Big Stone City and is currently rented and in corn. Surface examination and test pits between corn rows were negative.

Areas #2, 3, and 4: All are corn fields owned by the Big Stone Canning Company and planted to sweet corn. Again, all are on the flood plain. All were surface examined between each row of corn and test pits were excavated between corn rows adjacent to the river. All were sterile. It should be noted that the Whetstone River here was diverted as long ago as 1916 so that this is an entirely man-made channel.

3. Whetstone Diversion Channel

This is the zone of the man-made channel where the Whetstone was diverted to the northeast to juncture with the Minnesota immediately below Big Stone Lake. The photo in Fig. 5 shows this

channel with the river on the right and a dike on the left. The level area between the river and the dike has been disturbed in previous channelization efforts; it is flood plain; and test pits showed no cultural materials.

4. Minnesota River Channel Improvement Areas

This zone extends from the control structure just south of Big Stone Lake to the new channel area in the center of Sec. 21. The channel begins in an enormous junked car lot on the outskirts of Ortonville and then flows south near the east edge of the flood plain and valley. This, and the subsequent new channel area, have soils which are alluvially deposited, probably fairly recently, and which are very fine clay/silt. Several bank exposures were shaved for examination, and test pits were excavated at 20 m (25 yd.) intervals. No cultural materials were discovered.

5. New Minnesota River Channel

This channel will move from the cutoff directly down the center of the valley to the upper reservoir area of the refuge. The zone is now an immense corn field owned by a feed lot operator who is growing the corn for silage. Like the area immediately upstream, this is a zone of alluvial deposition characterized by clay/silt deposition. The A-B soil horizon is approximately 25 cm (9.75 in.) deep underlain by a grey silt/clay. Both the AB horizon and the C horizon are devoid of even the smallest sand grain.

C. Conclusions

1. There will be no impact on significant historic or prehistoric sites based on this survey. Construction engineers

should be cautioned, however, to watch for any deeply buried evidences of human activity. The Browns Valley Man site (Jenks, 1937), for example, lies north in the zone between Big Stone and Traverse Lakes and is such a deeply buried early man site. Like most of these sites, it had no surface indications, and would not have shown in test pits into the AB soil horizons. Thus, great care must be taken to examine deep cuts, particularly in the Minnesota River new channel area.

2. The area appears to be devoid of sites, and like the valley located immediately downstream, it is a low area subjected to flooding in the past. Despite the fact that a very large number of prehistoric and historic archaeological sites are recorded for the zones bordering Big Stone and Traverse Lakes, the upper Minnesota Valley lying just below seems to have held little attraction. One can speculate that the lakes themselves with their flat lakeshore beaches, vegetation cover on the steep upland slopes, and the ample water supply and protection offered habitation and burial areas much more attractive than the low flood plain of the Minnesota River bottoms.

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Association.

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Fig. 1. Whetstone bank stabilization area. East bank north of Hwy. 12.

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Fig. 2. Whetstone bank stabilization area. East bank south of Hwy. 12.



Fig. 3. Whetstone diversion channel. Approximately Sta. 8+00 showing bank erosion.



Fig. 4. South Dakota disposal area west and north of Hwy. 12.



Fig. 5. Whetstone diversion channel from Sta. 27+00 toward Hwy. 12 bridge. River channel on right; dike on left.



Fig. 6. Minnesota River new channel area. Photo northeast from upland at Big Stone-Lac Qui Parle County line. Planned channel is in the center of the corn field.



Fig. 7. Minnesota River new channel. Close-up of fine silt surface.

ABBREVIATED RESUME

Elden Johnson, B.A.; M.A.; Ph.D.
Professor of Anthropology and State Archaeologist
University of Minnesota

Born: Brookings, South Dakota, 24 October 1923

Home Address:

3620 Coolidge Street Northeast
Minneapolis, Minnesota 55418

Business Address:

Department of Anthropology
215 Ford Hall
University of Minnesota
Minneapolis, Minnesota 55455

Education:

1940-41 University of New Mexico
1945-50 University of Minnesota
1950-53 Yale University

Professional Employment:

1948-50 St. Paul Science Museum, Assistant Curator
1950-52 Human Relations Area Files, Analyst
1953-55 St. Paul Science Museum, Curator
1955-75 University of Minnesota, Assistant to Professor
1958-59 Director, St. Paul Science Museum
1962 Visiting Assistant Professor, University of Utah

Current Professional Positions:

Minnesota State Archaeologist
Director, Archaeology Program for Minnesota
President and organizer, Council for Minnesota Archaeology
Scientific and Natural Areas Committee, Minnesota Department of Natural Resources
Society for American Archaeology, Committee on Public Understanding
Minnesota Historic Sites Review Committee, Minnesota Historical Society
Editor, Minnesota Prehistoric Archaeology Series
Chairman, Department of Anthropology

Archaeological Field Research:

1953-55 Spring Lake, Minnesota. Science Museum
1959-74 Annual field research in Minnesota. Major excavations:
Itasca Bison Site, Hubbard County
Crookston Site, Polk County
Grand Portage, Lake County

Archaeological Field Research (continued)

Orwell Site, Ottertail County
Lake Carlos Site, Douglas County
Petaga Point, Mille Lacs County
Vineland Bay Site, Mille Lacs County
Cooper Site, Mille Lacs County
Wilford Site, Mille Lacs County
Bartrum Site, Goodhue County
1965 Archaeological survey, Pakistan

Ethnological Field Research:

1948 Standing Rock Reservation, North Dakota
1952-53 Thailand
1957-58 Prairie Island and Morton, Minnesota

Fellowships and Grants:

1950-52 Yale University Graduate Fellow
1952-53 Ford Foundation Foreign Area Fellow
1959-61 National Science Foundation Glacial Lake Agassiz Research Grant
1963-74 Annual research grant, Minnesota Resources Commission
1964 Northern States Power Company research grant
1965-66 Hill Family Foundation grant for excavation of the Itasca Bison Site by C. T. Shay
1973-74 U. S. National Park Service grant, Big Stone-Whetstone Reservoir Survey
1973 National Institute of the Humanities, Museum Fellow

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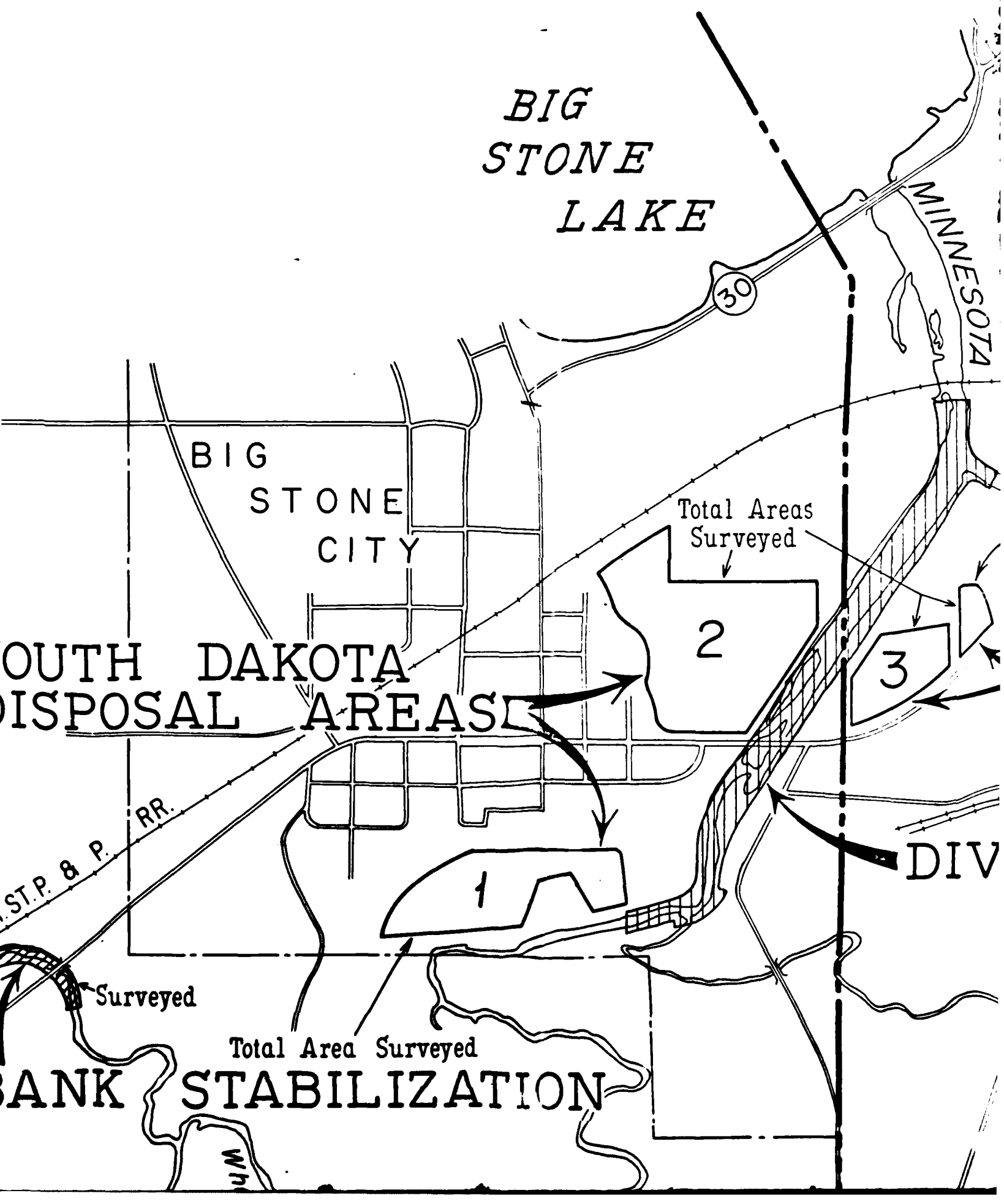
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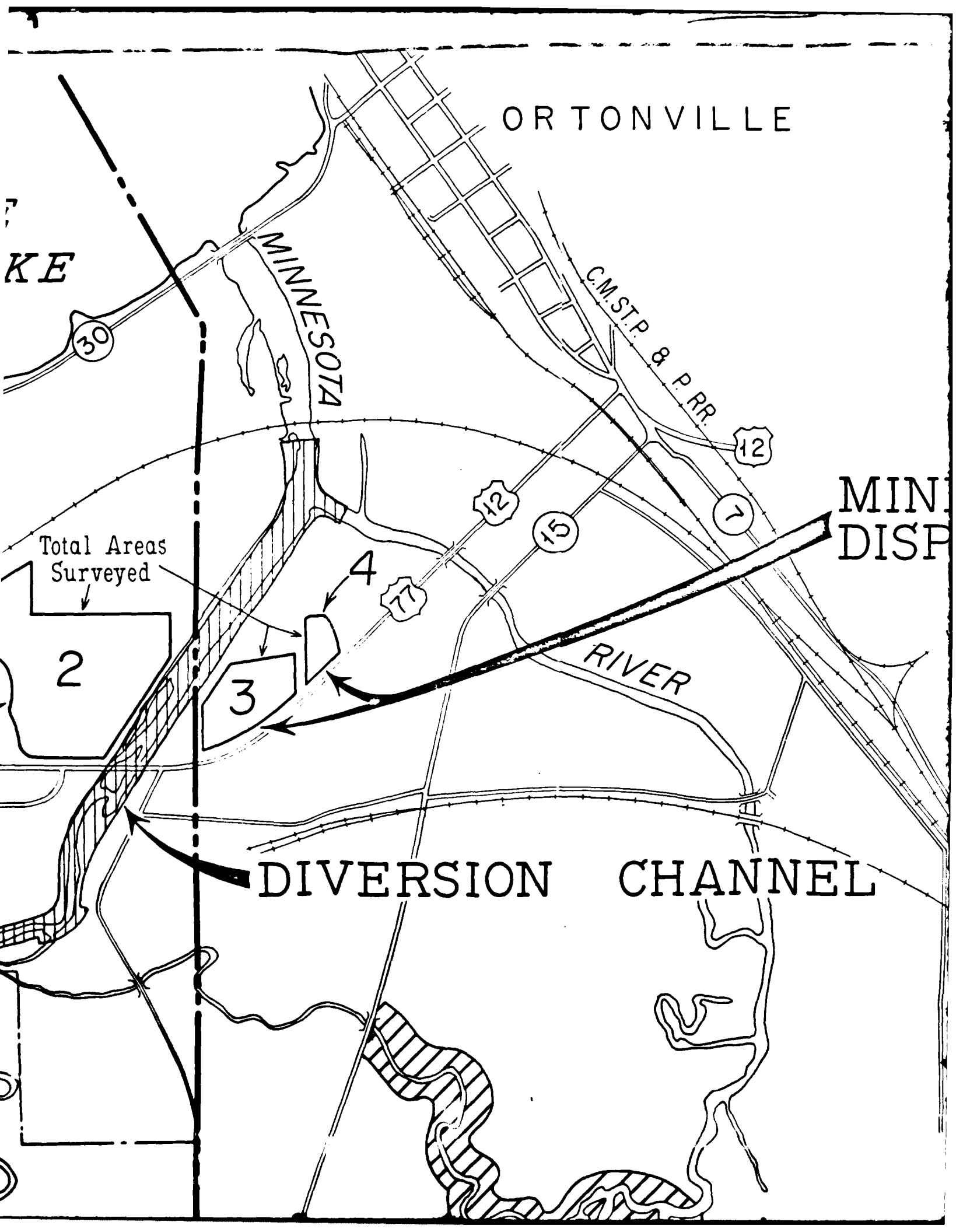
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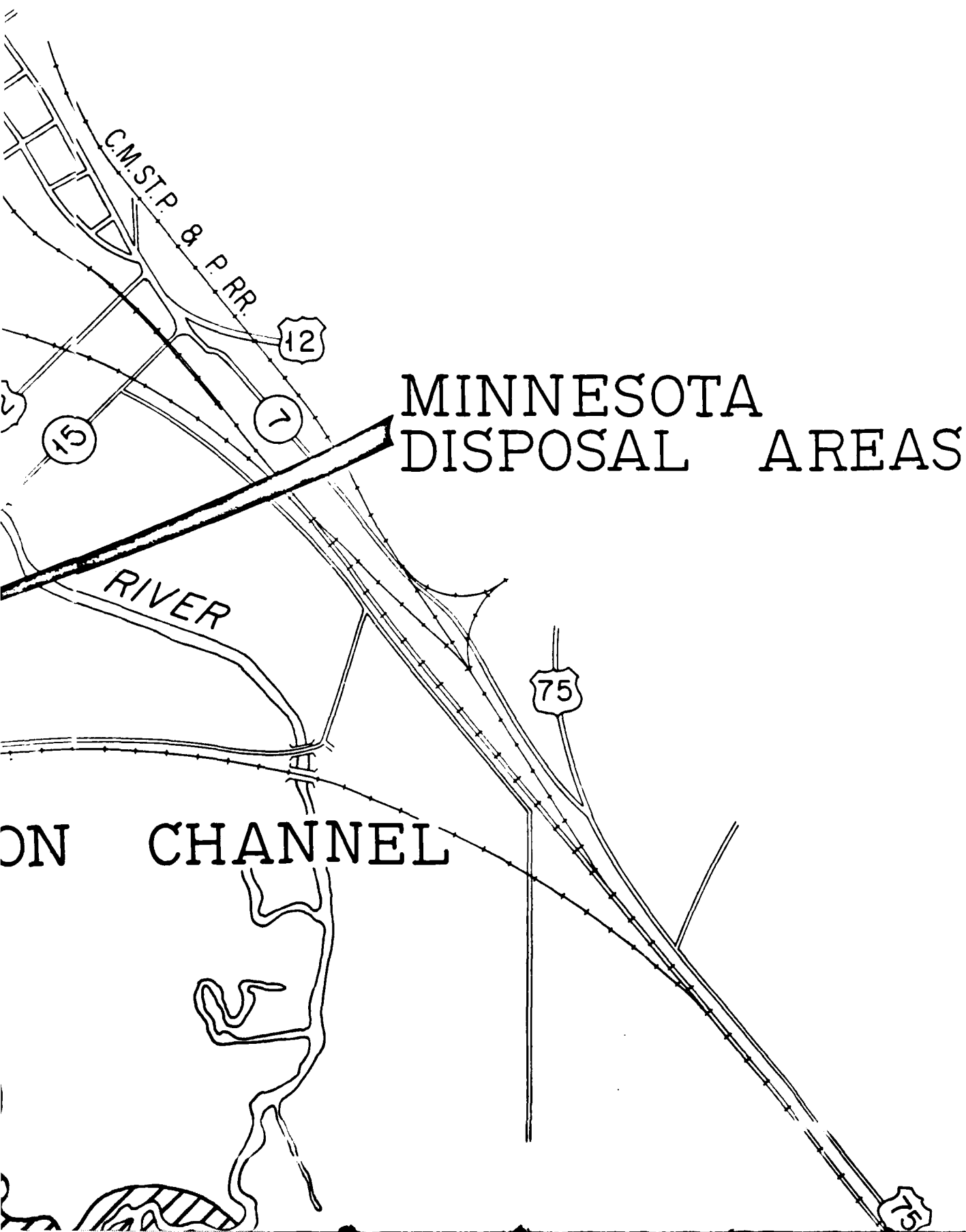
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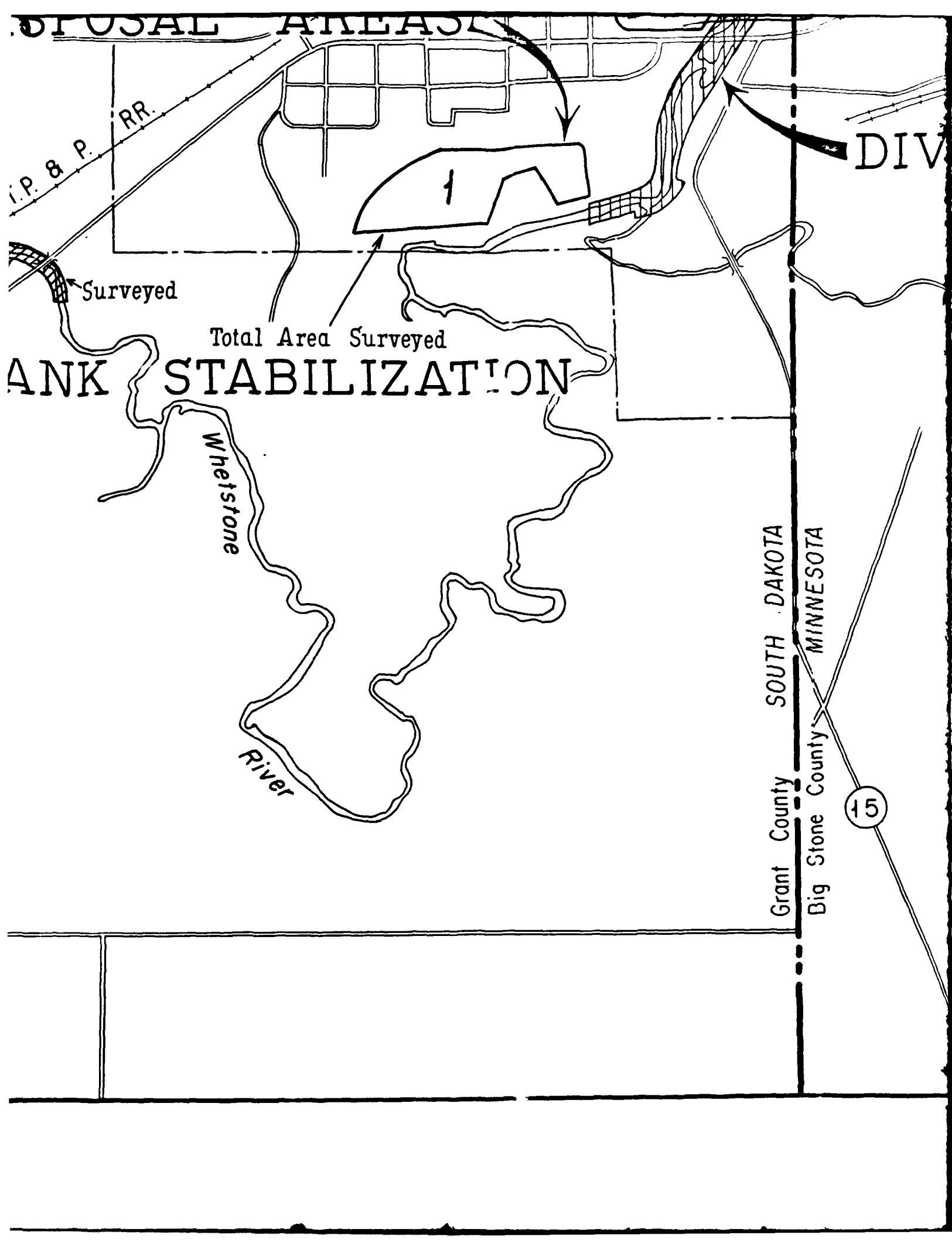
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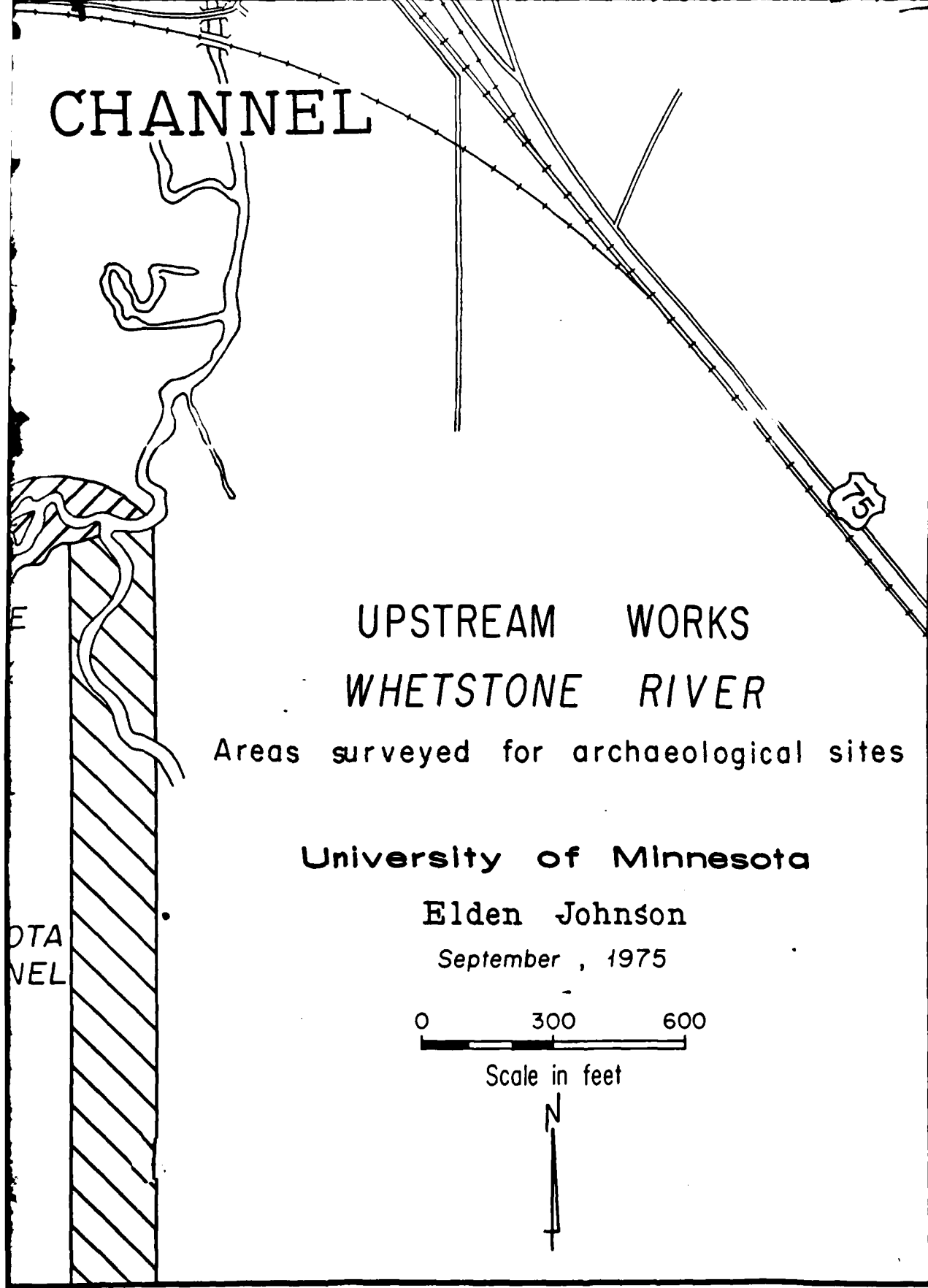
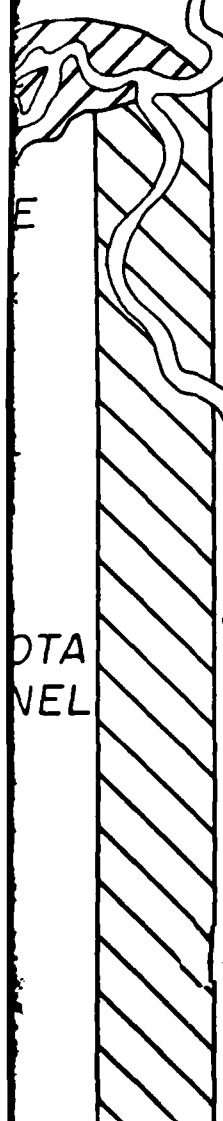
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